TABLE 5 The PPV of the Lemon Sign in the General Population

Lemon Sign	Spina Bifida	No Spina Bifida	Total
+	9	140	149
–	1	9,850	9,851
Total	10	9,990	10,000

Note.—SE = 90.0%, SP = 98.6%, PPV = 6.0%, NPV = 99.99%, prevalence = 0.1%.

TABLE 4 Lemon Sign Versus Spinal Cord Defect in Fetuses Prior to 24 Weeks

Lemon Sign	Spina Bifida	No Spina Bifida	Total
+	13	3	16
–	1	212	213
Total	14	215	229

Note.—SE = 92.9%, SP = 98.6%, PPV = 81.3%, NPV = 99.99%, prevalence = 6.1%.

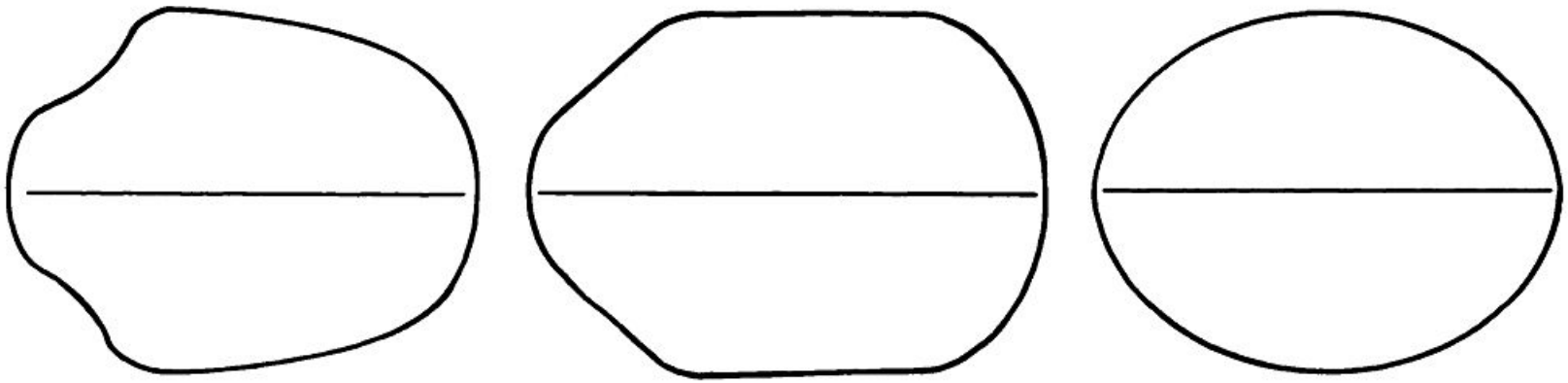
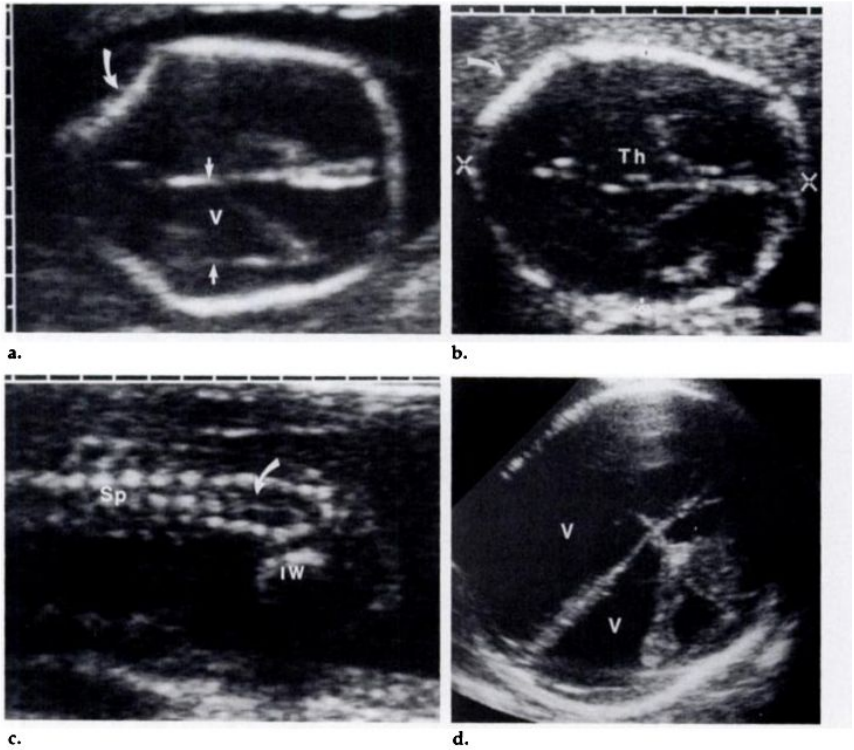


Figure 1. Schematic illustrating **(a)** the lemon sign, shown as a concave frontal contour; **(b)** flattened frontal contour; and **(c)** normal cranial configuration shown as convex cranial contour.



a. b. c. d.

Figure 2. Lemon sign. **(a)** Transverse cranial sonogram obtained at 19 menstrual weeks, in a woman referred for sonography because of an elevated MS-AFP level, shows a concave frontal contour (curved arrow). Also note moderate dilatation (straight arrows) of the ventricles (*V*). **(b)** Scan at the level of the thalami (*Th*) shows a linear frontal contour (arrow). **(c)** Longitudinal sonogram of the spine (*Sp*) demonstrates a small dysraphic defect in the lower lumbar area (curved arrow). *IW* = iliac wing. **(d)** Repeat sonogram obtained at 37 weeks, after a decision was made to continue the pregnancy, shows progressive hydrocephalus and resolution of the lemon sign. *V* = ventricles.

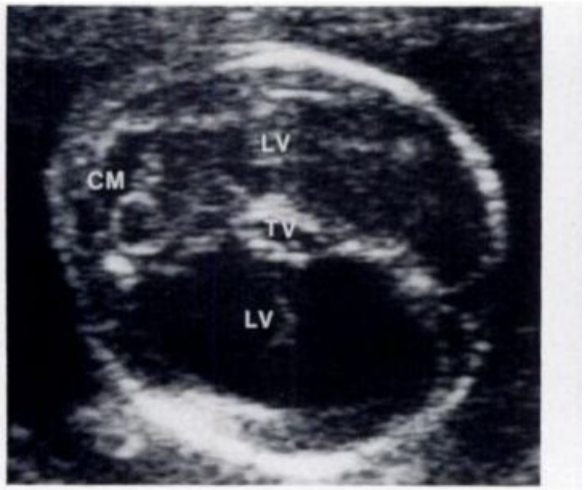


Figure 3. Normal cranial configuration associated with hydrocephalus. Transverse cranial sonogram angled through the posterior fossa, obtained at 22 menstrual weeks, shows dilatation of the lateral ventricles (*LV*) and third ventricle (*TV*) and a convex frontal contour. Also note a normal-appearing cisterna magna (*CM*). Aqueductal stenosis without spina bifida was found at autopsy after termination of pregnancy.

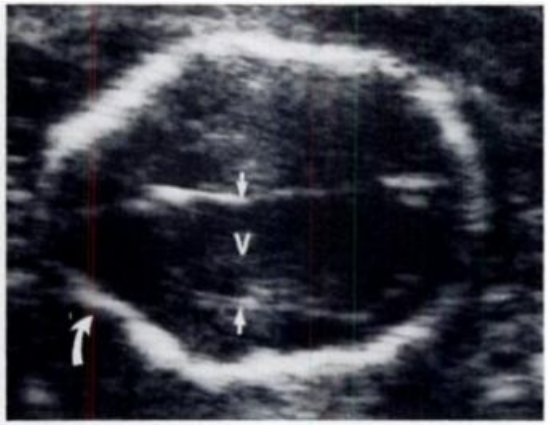


Figure 4. Spina bifida missed at sonography. Transverse cranial sonogram at 21 weeks demonstrates moderate dilatation (straight arrows) of the ventricles (*V*) that was initially noted on a sonogram obtained elsewhere. A spinal defect was not detected at sonography but was found at autopsy after termination of pregnancy. On retrospective evaluation, a concave frontal contour is identified (curved arrow).

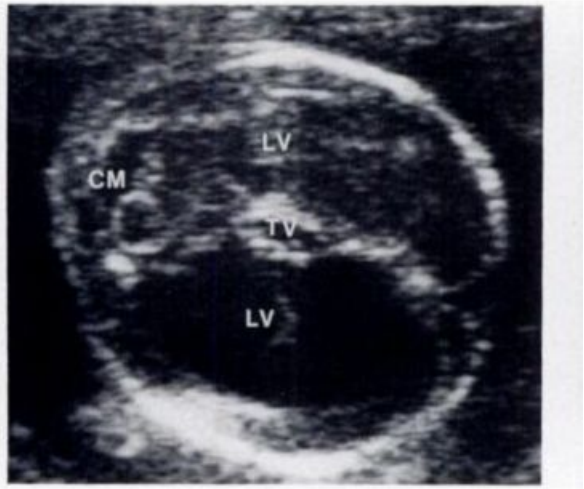


Figure 3. Normal cranial configuration associated with hydrocephalus. Transverse cranial sonogram angled through the posterior fossa, obtained at 22 menstrual weeks, shows dilatation of the lateral ventricles (*LV*) and third ventricle (*TV*) and a convex frontal contour. Also note a normal-appearing cisterna magna (*CM*). Aqueductal stenosis without spina bifida was found at autopsy after termination of pregnancy.

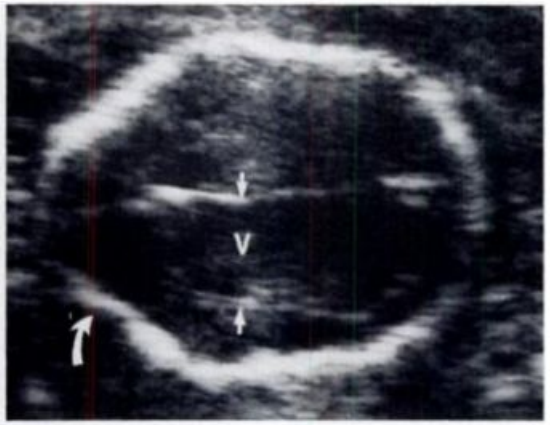


Figure 4. Spina bifida missed at sonography. Transverse cranial sonogram at 21 weeks demonstrates moderate dilatation (straight arrows) of the ventricles (*V*) that was initially noted on a sonogram obtained elsewhere. A spinal defect was not detected at sonography but was found at autopsy after termination of pregnancy. On retrospective evaluation, a concave frontal contour is identified (curved arrow).

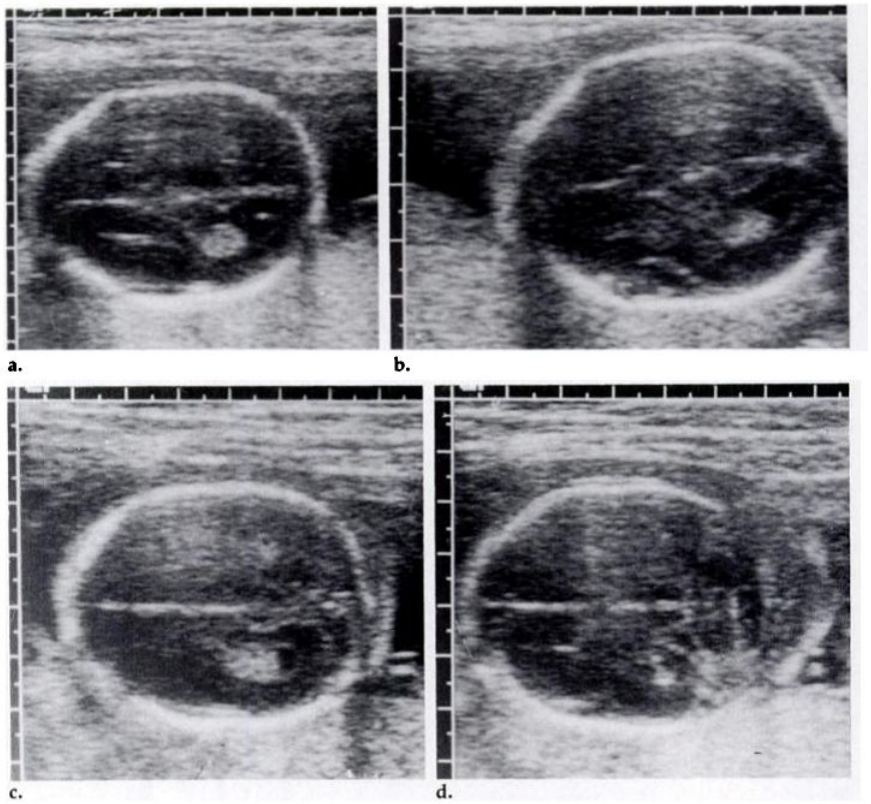
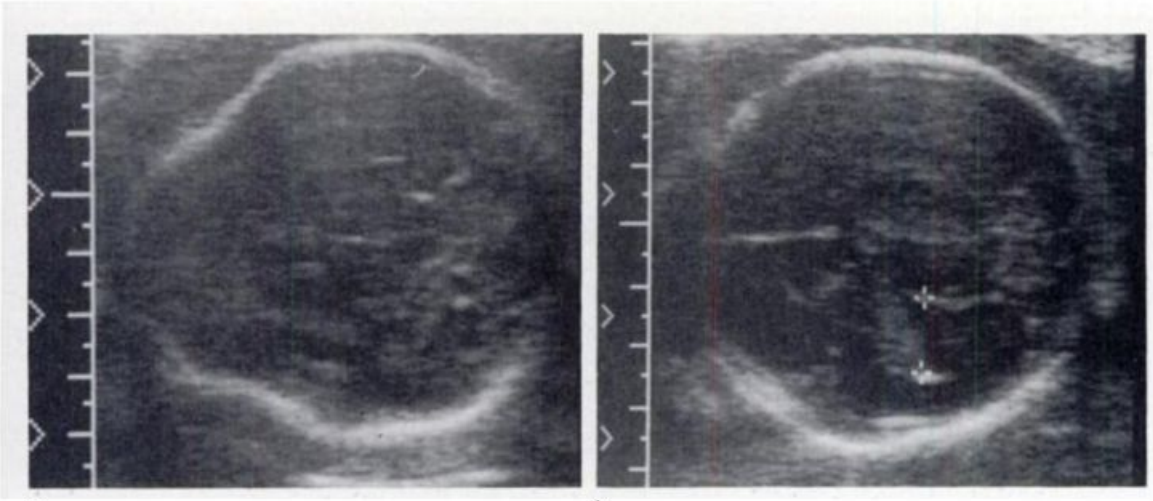


Figure 1. **(a, b)** Axial sonograms of a fetal head demonstrating the lemon sign. This fetus was at high risk for a myelomeningocele; the mother had previously delivered a child with myelomeningocele. No hydrocephalus (note normal ventricular atrium in **a** and **b**), spina bifida, or effacement of the cisterna magna **(d)** was seen. The alpha-fetoprotein (AFP) level was normal. A normal baby was delivered. Note as well that a lemon sign can be masked by an inappropriate plane of section **(c)**.



a. b.

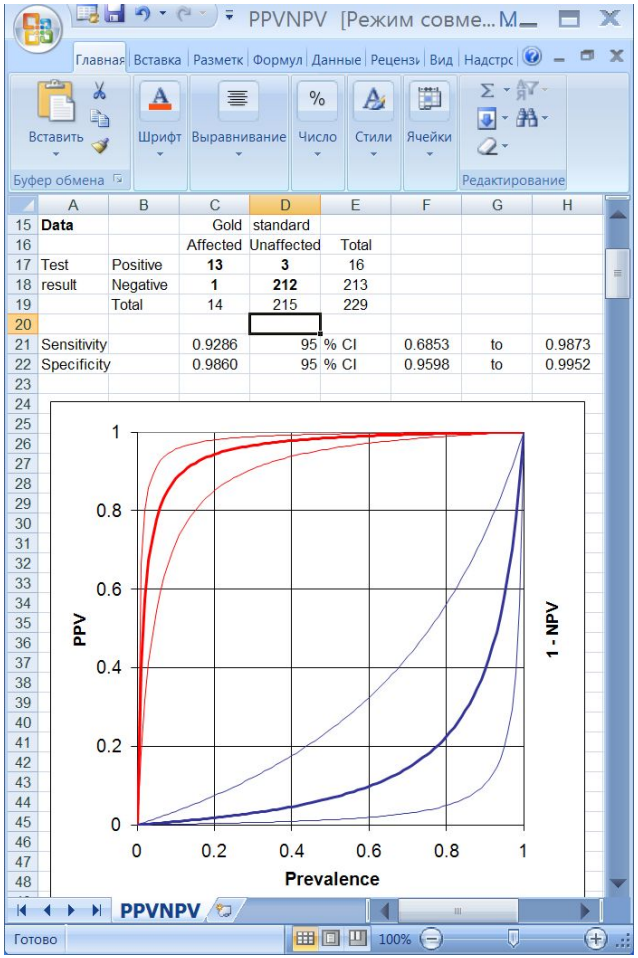
Figure 2. Axial sonograms of the fetal head demonstrating the lemon sign **(a)** and hydrocephalus **(b)**. The newborn, although abnormal, had no myelomeningocele, and none was diagnosed in utero. Cursors mark the walls of the enlarged lateral ventricular atrium.

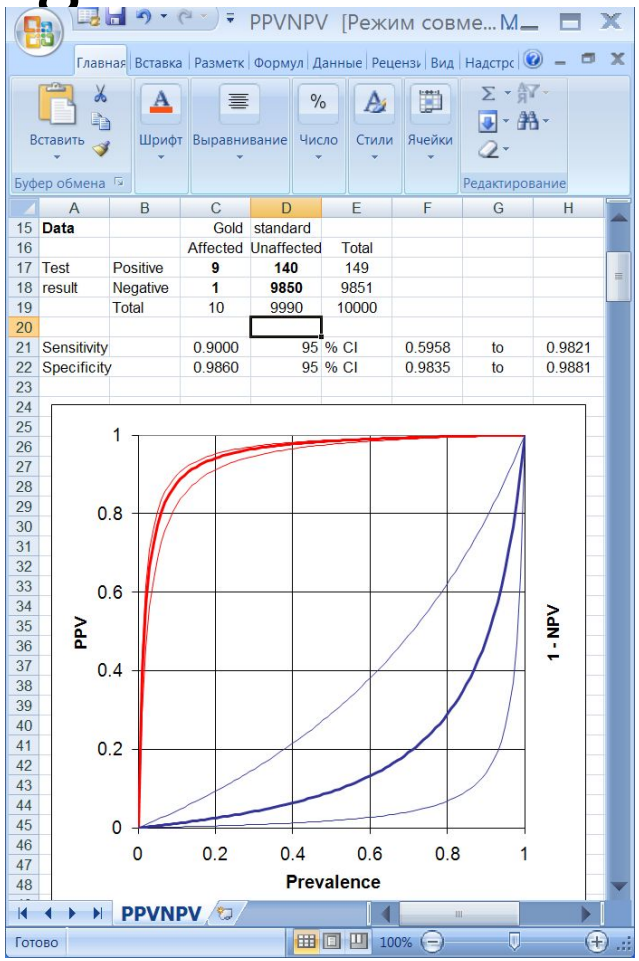
Группа высокого риска и общая популяция: Prev = 6% и 0,1%

	Spina Bifida		
Lemon sign	+	-	Всего
+	13	3	16
-	1	212	213
Всего	14	215	229

	Spina Bifida		
Lemon sign	+	-	Всего
+	9	140	149
-	1	9850	9851
Всего	10	9990	10000

Диагностика расщепления позвоночника Spina Bifida посредством “lemon” sign





Kraemer H.C., Morgan G.A., Leech N.L., Jeffrey A. Gliner J.A., Vaske J.J., Harmon R.J.
Measures of Clinical Significance.
J. Am. Acad. Child Adolesc. Psychiatry, 42:12, 2003, 1524 -1529.

Interpretation of the Strength (Effect Size) of a Positive Relationship

General Interpretation of the Strength of a Relationship	The *d* Family	The *r* Family	2 × 2 Associations		
	d	*r*	AUC (%)	RD (%)	NNT
Much larger than typical	≥1.00	≥0.70	≥76	≥52	≤1.9
Large or larger than typical	0.80	0.50	71	43	2.3
Medium or typical	0.50	0.30	64	28	3.6
Small or smaller than typical	0.20	0.10	56	11	8.9